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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,

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(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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(54) Title: PERSONAL CARE APPLICATIONS OF EMULSIONS CONTAINING ELASTOMERIC SILANES AND SILOX-ANES WITH NITROGEN ATOMS

(57) Abstract: Oil-in-water (O/W) and water-in-oil (W/O) emulsions and microemulsions containing elastomeric silanes or silox-anes preferably having quaternary ammonium groups are generally made by reacting organic quaternary ammonium compounds having epoxide groups or halohydrin groups, with silanes or siloxanes having amino groups. The reaction is carried out in an aqueous polar phase containing a crosslinking agent and surfactant. The emulsions and microemulsions are especially useful for treating hair, skin, or the underarm.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61K7/075 A61K A61K7/09 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with Indication, where appropriate, of the relevant passages Category * Relevant to claim No. US 2002/086935 A1 (LIN ZUCHEN ET AL) 12-20 4 July 2002 (2002-07-04) page 1, paragraph 18 - page 2, paragraph page 4, paragraph 63 - paragraph 64 page 5, paragraph 74 page 5, paragraph 78 - page 6, paragraph page 7, paragraph 98 - page 8, paragraph the whole document 1-11 EP 0 589 656 A (DOW CORNING) 1-20 30 March 1994 (1994-03-30) page 2, line 22 - page 4, line 14 examples Further documents are listed in the continuation of box C. Patent family members are listed in annex. Special categories of cited documents: *T* later document published after the international filing date or priority date and not in conflict with the application but "A" document defining the general state of the art which is not cited to understand the principle or theory underlying the considered to be of particular relevance "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to filing date *L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or document is combined with one or more other such docuother means ments, such combination being obvious to a person skilled *P* document published prior to the international filing date but in the art. later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the International search report 13 October 2004 28/10/2004 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo ni, Ruckebusch, V Fax: (+31-70) 340-3016

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T/US2004/011535

Category °	Citation of document, with Indication, where appropriate, of the relevant passages			
Careboth .	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.	
Y	EP 0 378 147 A (DOW CORNING) 18 July 1990 (1990-07-18) page 2, line 15 - line 50 page 3, line 19 - line 50 page 4, line 9 - line 20 page 5, line 16 - line 46 examples		1-20	
A	WO 02/10256 A (SOCKEL KARL HEINZ; LANGE HORST (DE); WAGNER ROLAND (DE); FIRSTENBERG) 7 February 2002 (2002-02-07) the whole document		1-20	
E	EP 1 426 398 A (DOW CORNING) 9 June 2004 (2004-06-09) the whole document		1-20	
	•			
	•			
	(continuation of second sheet) (January 2004)			

INTERNATIONAL SEARCH REPORT

Information on patent family members

TT/US2004/011535

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 2002086935	A1	04-07-2002	EP	1348004 A2	01-10-2003
	71.2	J. J. 2002	JP	2004521174 T	15-07-2004
			WO	02059211 A2	01-08-2002
			AU	4164302 A	01-07-2002
			EP	1343834 A2	17-09-2003
			JP	2004526001 T	26-08-2004
			WO	0250166 A2	27-06-2002
			US	2003050393 A1	13-03-2003
•			US	2003220425 A1	27-11-2003
			US	2003032717 A1	13-02-2003
EP 0589656	A	30-03-1994	US	5281240 A	25-01-1994
			AU	663971 B2	26-10-1995
			AU	4748793 A	31-03-1994
			DE	69310655 D1	19-06-1997
		•	DE	69310655 T2	18-12-1997
			EP	0589656 A2	30-03-1994
			JP	6192054 A	12-07-1994
EP 0378147	Α	18-07-1990	US	4908355 A	13-03-1990
			AU	624464 B2	11-06-1992
			AU	4770190 A	12-07-1990
			CA	2005846 A1	09-07-1990
			DE	69012592 D1	27-10-1994
	•		DE	69012592 T2	16-02-1995
			ΈP	0378147 A2	18-07-1990
			JP	2288830 A	28-11-1990
			JP .	2918947 B2	12-07-1999
WO 0210256	Α	07-02-2002	AU	9168601 A	13-02-2002
			MO	0210256 A1	07-02-2002
			EP	1309648 A1	14-05-2003
		ب بہت سے سے سے میں دروان اور ان سے سے سے سے سے سے سے میں ان ان اور ان	JP	2004521967 T	22-07-2004
EP 1426398	Α	09-06-2004	US	2004102570 A1	27-05-2004
			EP	1426398 A1	09-06-2004
			JP	2004176070 A	24-06-2004